

APPENDIX TABLE 5-38

S&E articles in physics, by region, country, or economy: 2003–16

(Number)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
World	137,020.0	145,615.0	173,882.0	185,311.0	193,442.0	192,815.0	195,836.0	200,131.0	205,086.0	203,728.0	206,146.0	213,107.0	199,795.0	200,106.0
North America	34,890.6	36,392.9	42,580.1	44,953.5	44,415.6	41,695.5	40,528.1	41,125.1	41,235.3	41,302.5	38,650.1	38,929.2	34,954.4	32,215.3
Canada	2,635.4	3,034.6	3,433.1	3,728.5	3,948.4	3,909.4	3,902.1	3,656.5	4,096.9	3,918.1	3,825.1	3,783.5	3,442.8	3,081.7
Greenland	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.1	0.8	0.0	0.0	0.0	0.0	0.0
Mexico	1,000.7	983.6	1,286.5	1,568.0	1,397.9	1,424.8	1,180.0	1,387.7	1,493.0	1,367.8	1,433.8	1,463.6	1,425.9	1,549.7
United States	31,254.5	32,374.8	37,860.5	39,657.0	39,069.1	36,361.0	35,445.7	36,080.8	35,644.5	36,016.6	33,391.1	33,682.1	30,085.7	27,584.0
Central America and Caribbean	151.1	142.5	176.2	189.7	180.0	164.5	151.1	131.9	136.8	117.2	109.8	115.2	109.9	95.9
Antigua and Barbuda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bahamas, The	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.1	0.0
Barbados	9.5	8.0	4.3	2.8	2.2	3.0	3.2	3.5	2.9	4.2	2.0	2.0	5.5	3.0
Belize	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Costa Rica	6.8	6.8	4.5	6.3	17.6	5.0	6.7	6.1	9.8	9.1	5.0	14.6	15.9	15.9
Cuba	52.2	41.6	71.1	56.9	47.5	56.3	42.5	29.8	36.1	30.1	35.4	35.9	28.5	29.5
Dominica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dominican Republic	0.0	0.3	0.0	1.0	1.2	0.7	0.7	1.4	0.3	0.6	0.0	0.1	0.0	0.0
El Salvador	0.0	0.0	0.0	0.0	0.8	0.1	0.0	0.0	0.0	0.5	0.0	0.0	1.0	0.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Grenada	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Guatemala	0.0	0.0	0.5	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.3
Haiti	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.3	0.0
Honduras	0.0	0.3	0.0	0.2	0.2	0.3	0.0	0.3	0.0	0.5	0.0	0.0	0.0	0.0
Jamaica	1.7	0.0	0.0	2.2	2.5	0.7	3.0	5.2	3.7	0.3	0.9	2.0	1.3	4.3
Nicaragua	0.0	0.0	0.0	1.0	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Panama	2.0	1.0	0.1	0.2	0.8	0.5	3.9	1.0	1.0	3.2	1.5	2.7	2.3	0.9
Puerto Rico	75.2	74.8	89.0	112.5	103.2	96.1	85.5	77.3	75.2	64.0	59.7	57.3	49.7	36.9
Saint Kitts and Nevis	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint Lucia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Saint Vincent and the Grenadines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trinidad and Tobago	3.3	9.2	6.8	6.0	3.7	1.2	5.4	7.0	6.3	4.5	3.9	0.4	5.2	5.2
South America	2,768.8	3,181.7	3,217.9	3,286.6	3,901.9	3,435.2	3,604.2	3,734.2	3,773.9	3,998.4	4,262.1	4,188.5	4,229.3	4,408.8
Argentina	493.3	535.4	500.0	510.5	712.7	535.6	663.4	534.7	656.7	575.9	598.7	565.7	578.1	535.8
Bolivia	2.9	0.7	0.8	1.6	0.5	0.9	2.4	1.2	1.0	0.1	2.6	2.9	1.3	7.2
Brazil	1,887.7	2,212.9	2,281.9	2,231.0	2,619.5	2,303.9	2,380.6	2,546.0	2,519.4	2,592.4	2,878.4	2,676.8	2,784.2	2,788.9
Chile	122.4	189.0	177.9	256.6	239.4	286.6	251.2	322.6	271.6	434.4	307.4	447.0	393.9	501.8
Colombia	90.8	115.1	119.0	154.5	163.5	182.0	159.4	195.0	220.3	266.0	345.1	362.3	312.7	418.3
Ecuador	3.4	2.1	3.8	4.5	6.1	2.7	5.7	5.5	4.2	11.5	9.3	14.2	30.5	25.4



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Guyana	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Paraguay	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.9	0.8	1.3	0.0	1.4	0.3
Peru	10.0	10.8	9.5	8.6	22.6	7.9	20.6	19.3	19.6	17.6	24.9	19.4	13.0	22.5
Suriname	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.1	0.4
Uruguay	27.5	26.2	31.3	21.4	41.8	31.5	35.2	33.4	31.1	24.5	29.3	35.6	46.2	52.9
Venezuela	130.8	88.3	93.7	97.2	95.6	84.2	85.7	76.4	49.2	75.1	65.2	64.3	67.8	55.2
Europe	55,722.5	59,045.0	67,243.0	69,281.2	72,035.8	72,466.1	73,658.7	74,061.7	75,558.2	74,895.2	75,047.0	77,519.3	73,119.6	72,552.4
EU	42,615.2	45,632.2	52,467.7	54,195.8	56,688.4	57,046.8	58,037.1	58,119.3	58,666.7	58,370.3	58,318.2	58,736.4	53,181.0	50,883.1
Austria	862.4	771.1	977.0	889.2	1,075.8	1,021.5	1,065.2	1,096.1	1,156.4	1,052.5	1,188.8	1,115.9	995.6	899.4
Belgium	1,280.7	1,305.4	1,493.8	1,541.6	1,524.5	1,640.9	1,530.5	1,610.4	1,526.8	1,689.1	1,508.5	1,646.3	1,418.7	1,466.1
Bulgaria	193.7	229.8	234.6	245.8	420.1	294.3	312.2	466.6	298.1	333.5	270.0	296.9	260.7	293.7
Croatia	117.6	145.8	153.6	144.7	189.6	190.6	198.1	187.6	191.1	179.1	158.1	124.6	133.6	123.1
Cyprus	16.4	14.6	27.8	35.5	36.4	50.8	52.9	63.8	63.7	54.2	95.1	70.6	77.3	80.2
Czech Republic	551.6	785.7	815.3	965.0	982.3	1,017.0	1,108.1	1,069.4	1,123.5	1,140.3	1,240.8	1,253.8	1,419.9	1,390.9
Denmark	635.7	630.3	803.8	770.1	826.6	813.3	852.2	902.3	1,052.3	1,013.8	1,007.3	1,015.9	904.8	861.1
Estonia	75.5	77.4	113.8	93.5	129.3	118.4	108.9	134.5	110.4	101.8	125.1	145.2	119.3	101.1
Finland	705.8	704.6	802.2	851.3	891.6	933.7	910.1	865.8	956.8	881.7	968.0	933.7	739.9	747.0
France	6,510.8	7,126.3	8,013.4	8,316.8	8,613.9	8,922.0	8,854.8	8,633.7	8,843.6	8,648.6	8,578.0	8,627.4	7,645.9	7,300.5
Germany	9,934.1	10,185.2	11,796.6	11,952.2	12,547.3	12,230.0	13,209.5	13,264.3	13,438.7	13,418.6	13,516.5	13,171.7	11,602.9	11,060.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	546.6	588.6	778.5	900.5	1,038.6	918.3	927.0	866.7	835.2	826.5	827.7	817.7	800.6	760.5
Hungary	489.7	472.8	594.1	520.7	526.9	574.4	495.2	497.0	521.6	540.8	483.8	529.5	504.8	421.9
Ireland	242.6	371.3	653.1	525.8	579.1	578.0	628.0	650.4	706.8	589.8	542.2	548.5	427.5	412.2
Italy	4,824.2	5,410.7	5,759.2	6,225.5	6,683.2	6,486.1	6,190.8	6,196.8	5,945.0	6,048.2	6,135.8	6,552.8	5,763.0	5,765.9
Latvia	43.0	57.9	85.9	55.5	90.1	87.6	79.1	89.7	114.3	105.7	99.7	92.0	139.1	109.6
Lithuania	109.1	192.9	252.2	316.0	234.9	319.8	332.0	321.5	288.9	236.6	308.9	333.2	319.0	212.7
Luxembourg	4.8	10.2	2.7	6.3	10.2	15.0	23.8	22.9	38.1	38.3	52.8	56.7	51.4	60.2
Malta	0.3	1.5	5.8	2.7	3.3	8.7	5.6	1.8	10.8	8.9	11.6	15.7	9.4	12.6
Netherlands	1,638.0	1,800.9	1,961.6	1,963.2	1,910.0	1,894.4	1,929.6	1,931.5	2,090.0	2,028.9	1,956.2	1,901.0	1,618.2	1,638.0
Poland	2,414.1	2,546.5	2,984.9	3,147.8	2,874.8	3,211.4	2,990.6	2,876.0	2,839.1	3,083.0	3,594.7	3,528.3	3,838.3	3,508.3
Portugal	559.7	558.7	691.6	711.5	775.8	812.7	850.0	1,028.9	991.4	999.9	997.2	952.6	846.4	837.2
Romania	382.6	416.5	476.5	475.2	752.9	917.0	1,077.4	1,174.7	975.5	1,106.2	1,014.1	803.0	1,063.3	935.5
Slovakia	236.0	300.7	223.3	318.2	251.4	381.0	263.8	357.1	276.1	345.1	321.3	485.0	335.9	371.3
Slovenia	257.1	203.8	290.4	316.1	311.0	333.9	308.7	340.1	359.8	311.4	323.2	291.9	244.4	231.9
Spain	2,518.5	2,851.5	3,436.0	3,381.6	3,873.3	3,655.1	4,154.0	4,024.0	4,376.3	4,209.0	4,025.4	3,832.4	3,384.3	3,289.3
Sweden	1,392.1	1,474.2	1,566.0	1,603.3	1,502.9	1,469.8	1,471.3	1,569.0	1,621.4	1,601.5	1,486.8	1,606.9	1,412.3	1,312.0
United Kingdom	6,072.4	6,397.2	7,474.0	7,919.9	8,032.6	8,150.9	8,107.8	7,876.7	7,915.2	7,777.1	7,480.5	7,987.1	7,104.3	6,680.3
Other Europe	13,107.2	13,412.8	14,775.3	15,085.5	15,347.5	15,419.3	15,621.5	15,942.4	16,891.5	16,524.8	16,728.8	18,782.9	19,938.6	21,669.2
Albania	1.0	0.8	1.9	2.5	12.4	2.0	6.0	28.5	2.2	2.3	4.3	1.0	5.1	14.5



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Andorra	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Belarus	480.5	424.0	559.4	476.9	598.9	388.1	404.0	391.3	434.9	329.4	361.7	349.2	325.5	313.4
Bosnia and Herzegovina	3.9	2.7	4.8	9.0	12.6	11.0	12.0	11.5	9.2	13.3	11.7	8.5	17.1	17.2
Holy See (Vatican City)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.1
Iceland	13.7	11.7	15.9	15.5	13.0	28.5	33.4	38.2	33.4	54.7	40.6	34.1	31.2	32.0
Kosovo	0.0	0.0	0.0	0.0	0.0	2.3	2.6	5.9	0.6	1.2	2.7	2.5	4.4	10.0
Liechtenstein	5.2	2.9	5.6	5.3	6.4	2.0	3.1	4.8	7.3	5.7	6.3	8.0	0.3	3.4
Macedonia	16.3	21.4	15.4	16.8	18.2	21.6	20.5	26.9	27.7	11.4	18.5	15.2	17.7	31.8
Moldova	54.5	39.8	79.8	49.6	60.1	44.9	70.0	53.0	66.8	72.5	57.6	48.2	57.9	51.0
Monaco	0.0	1.8	1.0	1.6	0.2	0.0	0.5	0.3	1.3	1.2	1.1	0.8	0.9	2.7
Montenegro ^a	na	na	na	na	16.4	11.0	7.2	17.1	8.0	7.0	15.4	14.5	1.4	18.8
Norway	206.7	254.7	333.8	353.4	394.4	420.1	387.1	455.8	511.9	502.1	470.8	449.6	399.2	392.4
Russia	8,432.8	8,595.0	9,054.7	9,111.1	8,675.7	8,980.3	9,106.6	9,211.3	9,635.2	9,324.0	9,505.2	11,287.2	12,700.2	14,558.9
San Marino	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.5	0.1	0.1	0.0
Serbia ^a	na	na	na	na	346.1	324.8	307.4	324.7	291.8	392.9	298.0	305.9	275.1	291.8
Serbia and Montenegro ^b	128.3	138.9	202.5	238.4	na	na	na	na	na	na	na	na	na	na
Switzerland	1,638.7	1,679.6	2,026.2	2,197.0	2,303.3	2,165.4	2,173.6	2,346.6	2,428.0	2,460.1	2,523.9	2,574.5	2,300.8	2,051.7
Turkey	652.8	768.2	810.9	946.4	1,364.1	1,079.0	1,257.8	1,178.1	1,250.8	1,478.0	1,414.4	1,617.8	1,834.7	2,128.8
Ukraine	1,472.9	1,471.4	1,663.4	1,662.1	1,525.5	1,938.4	1,829.8	1,848.4	2,181.8	1,868.9	1,995.9	2,065.3	1,966.8	1,750.8



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Middle East	2,052.0	2,181.9	2,487.6	2,789.3	3,235.1	3,609.5	3,768.2	4,096.7	4,781.0	4,928.1	5,160.9	5,511.3	5,657.1	6,168.1
Armenia	130.8	121.7	149.6	117.3	164.3	145.1	163.7	201.8	245.6	229.1	181.3	220.7	163.1	189.3
Azerbaijan	74.2	62.4	69.4	58.9	75.8	82.4	86.9	109.4	129.9	97.5	83.8	90.8	102.3	108.7
Bahrain	6.9	14.9	10.4	17.7	20.8	15.8	8.2	25.3	18.3	11.8	11.2	11.4	9.1	10.5
Gaza Strip	11.0	15.2	7.4	6.4	16.1	14.0	12.7	12.1	23.8	22.6	18.8	16.5	16.1	12.1
Georgia	52.5	68.4	52.9	68.7	62.1	75.4	68.1	54.7	73.1	46.9	51.4	54.6	54.8	47.4
Iran	309.2	425.6	546.1	784.1	972.5	1,372.0	1,615.4	1,848.9	2,165.7	2,321.6	2,545.1	2,752.2	2,908.7	3,326.5
Iraq	9.8	2.8	13.3	15.8	27.5	20.5	32.8	33.7	53.7	81.5	91.2	86.5	86.7	132.3
Israel	1,238.8	1,232.3	1,369.7	1,435.9	1,558.9	1,521.0	1,361.4	1,337.0	1,415.9	1,397.1	1,352.8	1,298.7	1,305.6	1,113.2
Jordan	45.5	55.7	52.2	54.1	55.3	68.3	65.5	67.3	71.3	71.8	63.1	63.4	51.5	66.0
Kuwait	8.8	18.3	13.6	26.6	22.0	23.9	32.4	20.1	25.0	24.9	27.7	33.8	18.4	29.7
Lebanon	9.2	19.0	20.7	23.8	32.7	27.6	30.2	35.4	33.7	31.5	32.4	55.0	43.5	46.7
Oman	19.9	23.3	22.4	19.1	21.4	27.3	19.0	33.0	30.3	26.8	21.4	24.5	28.2	44.3
Qatar	4.4	2.4	3.9	7.9	10.3	13.4	13.0	14.1	23.1	25.3	35.5	38.7	60.5	76.6
Saudi Arabia	92.3	80.8	98.2	104.0	121.2	134.0	173.7	217.9	374.1	419.9	517.6	607.3	644.4	794.8
Syria	6.4	13.4	19.9	12.6	22.3	14.3	23.5	24.2	31.1	19.2	20.0	23.9	26.0	22.2
United Arab Emirates	26.0	21.7	31.3	30.6	42.1	34.2	52.5	45.2	50.4	83.4	81.9	107.0	124.0	129.1
West Bank	5.8	2.0	4.8	1.9	5.2	15.4	4.8	10.1	7.9	6.5	13.2	12.7	8.8	11.8
Yemen	0.4	2.1	2.0	4.0	4.8	4.8	4.6	6.8	8.2	10.6	12.4	13.7	5.4	7.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Africa	875.4	1,035.2	1,108.1	1,202.9	1,369.8	1,562.5	1,639.5	1,576.7	1,628.6	1,837.8	1,823.9	2,279.1	2,453.4	2,821.6
Algeria	127.4	158.6	173.4	205.1	274.7	372.8	366.5	327.6	294.6	397.0	353.5	450.4	458.8	556.1
Angola	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1
Benin	4.3	3.3	3.2	7.1	11.3	5.2	5.8	8.2	6.7	5.7	9.8	14.8	15.7	16.2
Botswana	9.0	5.0	2.7	3.7	7.0	4.4	0.7	2.1	0.8	3.1	0.6	3.4	2.6	8.7
Burkina Faso	2.0	1.0	0.6	1.1	0.7	1.1	1.8	0.0	0.6	2.5	2.5	1.7	3.5	0.1
Burundi	1.4	1.3	0.0	0.3	0.7	0.0	0.0	0.1	0.0	0.1	1.0	0.0	0.1	0.1
Cameroon	22.2	29.3	40.7	47.0	33.0	41.7	36.9	27.8	35.4	43.4	43.1	60.7	62.7	69.3
Cape Verde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Central African Republic	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	1.0
Chad	0.0	0.0	0.3	0.5	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.3
Comoros	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Congo, Democratic Republic of the	0.1	0.0	0.1	0.1	0.2	0.7	1.3	0.1	0.3	0.2	0.1	0.0	1.0	0.0
Congo, Republic of the	0.2	0.5	0.4	4.9	0.3	0.0	2.0	1.4	0.7	1.3	1.4	0.5	0.5	2.1
Côte d'Ivoire	0.0	0.9	1.0	1.3	1.9	3.3	1.1	1.5	5.7	0.4	1.7	0.1	2.6	1.2
Djibouti	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0
Egypt	342.5	335.0	375.9	396.3	455.0	435.3	514.9	491.7	456.9	461.3	506.5	589.5	680.5	752.1
Equatorial Guinea	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eritrea	0.0	0.0	0.0	0.0	0.0	0.8	1.5	0.3	0.0	0.0	0.0	0.0	0.0	0.3



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ethiopia	0.3	4.2	5.0	5.8	11.7	12.9	6.9	9.3	12.3	11.4	11.9	15.6	10.4	18.3
Gabon	0.0	0.0	0.0	0.0	0.8	2.3	0.3	0.2	1.2	1.4	0.6	0.3	0.9	1.3
Gambia, The	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Ghana	5.0	2.3	2.7	2.8	4.4	1.6	1.7	6.9	5.0	5.9	3.7	7.3	6.5	15.2
Guinea	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Guinea-Bissau	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kenya	2.8	7.1	2.6	0.8	3.5	2.0	5.3	7.0	7.9	13.0	11.6	11.6	9.9	8.9
Lesotho	0.1	0.7	0.3	1.7	0.2	1.8	0.3	0.3	0.0	1.0	1.0	0.0	0.8	1.2
Liberia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5
Libya	2.5	2.8	1.7	2.3	0.7	6.8	7.7	9.9	5.4	8.1	14.0	9.9	7.6	5.8
Madagascar	0.0	0.1	0.0	0.6	14.9	1.1	1.2	2.0	6.7	0.5	2.3	0.5	2.7	2.0
Malawi	0.0	0.0	0.1	0.0	0.2	0.1	0.1	0.0	1.2	0.0	0.1	0.6	0.0	0.4
Mali	0.3	0.7	0.3	0.1	0.0	0.3	0.0	0.0	0.0	0.3	0.3	0.0	1.4	0.0
Mauritania	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Mauritius	1.0	0.0	2.3	2.0	2.0	2.7	5.7	3.5	0.6	1.0	3.4	3.2	1.5	2.2
Morocco	107.7	150.0	106.5	106.3	89.7	116.8	95.6	108.4	118.9	131.0	149.7	194.6	191.4	322.9
Mozambique	0.8	0.0	0.3	0.7	0.2	0.5	0.2	0.0	0.0	2.4	0.0	0.1	0.3	0.4
Namibia	0.5	1.2	5.9	2.3	0.6	0.4	0.7	1.0	0.3	0.1	1.9	0.1	1.8	1.8
Niger	2.0	0.2	0.5	0.0	0.2	0.0	1.0	0.5	0.3	0.3	0.1	1.0	0.3	0.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nigeria	14.8	15.7	30.9	23.1	16.0	20.5	27.7	43.4	47.5	54.2	59.6	58.3	69.2	91.6
Rwanda	0.1	0.0	0.0	0.1	0.0	0.0	1.9	2.1	0.9	1.2	1.3	0.7	0.6	0.4
São Tomé and Príncipe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senegal	4.5	1.5	6.0	2.7	4.3	7.1	3.6	6.4	9.7	2.6	9.9	8.9	7.5	6.2
Seychelles	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.6	0.0
Sierra Leone	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.1	0.2	0.0	0.0	0.1
Somalia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
South Africa	138.9	191.3	214.8	240.9	259.7	324.9	327.0	319.1	387.9	443.2	401.9	529.9	543.1	556.5
South Sudan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Sudan	1.0	2.9	1.4	1.8	1.4	5.8	3.2	6.2	10.3	10.9	12.5	5.3	7.1	7.6
Swaziland	0.0	0.0	0.5	0.0	0.0	0.3	1.0	1.0	1.7	0.4	0.9	0.6	0.3	0.7
Tanzania	1.9	0.0	1.2	2.3	0.0	1.8	1.8	1.0	1.0	1.7	2.0	3.8	11.7	3.7
Togo	0.2	0.7	0.0	1.4	0.0	0.1	0.7	0.1	0.1	0.6	0.8	0.0	0.3	3.0
Tunisia	77.6	115.2	121.5	130.3	172.6	183.1	211.5	182.7	202.2	222.5	209.8	294.7	340.8	355.5
Uganda	0.0	0.3	0.0	0.0	0.5	0.3	0.1	2.2	1.4	0.4	1.4	2.0	1.9	3.0
Western Sahara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zambia	0.4	1.3	1.7	1.5	0.3	0.9	0.4	0.2	1.6	1.3	1.3	2.1	0.8	1.1
Zimbabwe	3.1	2.0	1.8	5.1	1.0	2.7	1.1	2.0	1.5	6.3	1.2	5.0	5.7	3.8
Asia	38,646.1	41,500.9	54,400.6	60,647.4	64,986.5	66,981.9	69,681.1	72,265.7	74,661.2	73,441.9	77,639.7	81,047.5	76,598.4	78,970.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.0	0.0	1.0
Bangladesh	42.8	33.0	36.2	47.4	55.2	76.0	64.5	88.1	85.1	93.9	125.6	123.2	130.8	276.3
Bhutan	0.0	0.7	0.3	1.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.3	1.5	1.0
Brunei	2.1	2.8	3.3	2.3	4.0	1.8	4.5	1.3	2.7	1.0	3.8	7.8	7.5	9.4
Burma	1.3	0.0	1.0	0.9	4.2	7.3	10.2	2.1	1.1	4.5	4.1	5.1	2.6	3.5
Cambodia	0.0	0.1	0.0	1.0	0.2	0.0	0.0	0.3	0.0	1.6	0.4	0.3	0.5	0.8
China	11,397.6	14,416.4	22,076.7	24,332.3	27,617.3	30,829.4	33,998.0	33,855.2	35,396.5	36,081.8	39,915.1	42,601.6	42,323.4	41,980.9
India	2,783.1	2,862.2	3,591.8	4,168.1	4,569.1	5,147.0	5,287.0	6,166.2	7,320.4	7,073.9	8,051.2	9,315.1	7,674.8	9,916.1
Indonesia	20.6	21.4	30.2	31.1	36.3	60.2	59.9	185.3	161.0	127.2	321.2	391.4	567.7	1,624.0
Japan	16,257.0	15,284.4	17,982.2	18,754.9	18,291.4	17,197.9	16,311.0	16,826.0	16,625.2	15,645.1	15,080.0	14,537.6	12,259.3	12,002.2
Kazakhstan	39.0	30.1	55.9	43.5	43.0	43.4	68.0	40.0	92.5	103.2	104.2	159.2	210.2	272.4
Kyrgyzstan	9.2	6.9	19.0	12.0	11.8	19.0	5.6	6.5	4.8	7.4	4.7	5.9	6.9	8.6
Laos	0.0	0.0	0.3	0.0	0.6	0.9	0.0	0.5	0.0	0.7	0.7	0.5	0.3	0.2
Malaysia	75.8	114.3	142.3	318.6	313.6	474.8	626.9	960.7	764.4	1,361.3	1,443.5	1,421.9	1,623.2	1,797.4
Maldives	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.7	0.1	1.0	0.0	0.2	0.0	0.0
Mongolia	3.9	2.6	5.3	10.7	3.8	2.6	25.5	14.2	22.0	20.8	10.6	17.5	17.6	6.8
Nepal	3.1	2.8	7.0	3.0	1.8	3.3	1.3	4.6	8.6	7.4	8.0	14.1	10.5	12.4
North Korea	0.3	1.0	3.8	4.7	1.7	1.3	2.3	3.1	1.7	3.6	5.2	3.9	12.9	9.3
Pakistan	70.4	70.4	123.5	165.1	241.2	299.8	285.7	328.9	389.4	407.8	494.6	532.7	598.5	725.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nauru	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	156.8	209.0	243.0	285.2	252.4	257.9	279.6	281.4	325.5	263.3	289.5	284.2	219.5	258.1
Niue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palau	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Samoa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solomon Islands	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Tonga	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tuvalu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vanuatu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unassigned	319.6	273.8	330.8	351.7	422.2	314.9	175.3	168.1	132.6	154.3	479.5	132.6	131.7	278.4

na = not applicable; country data do not exist.

EU = European Union.

^a Beginning in 2006, Serbia and Montenegro represented individual countries.

^b Serbia and Montenegro represented a single country for data purposes from 1992 to 2006.

Note(s)

Article counts refer to publications from a selection of journals, books, and conference proceedings in S&E from Scopus. Articles are classified by their year of publication and are assigned to a region, country, or economy on the basis of the institutional address(es) listed in the article. Articles are credited on a fractional-count basis. The sum of the regions, countries, or economies may not add to the world total because of rounding. Some publications have incomplete address information for coauthored publications in the Scopus database. The unassigned category count is the sum of fractional counts for publications that cannot be assigned to a region, country, or economy.

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